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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,988	01/29/2004	Jurgen Ciprian	54251	2865

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EXAMINER

TUCKER, ZACHARY C

ART UNIT PAPER NUMBER

1624

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/765,988	Applicant(s) CIPRIAN ET AL.	
	Examiner Zachary C. Tucker	Art Unit 1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. <u>herewith</u> .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>18Jun04</u> .   | 6) <input type="checkbox"/> Other: ____.                                    |

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Points of indefinite claim language arise in claims 1, 4-6, 8, 10, 11 and 14. All claims are rejected, however, because all claims depend either directly on indirectly from claim 1, which is indefinite, or because in addition to depending indirectly from claim 1, which is indefinite, the claim depends from another dependent claim which is indefinite for reasons in addition to depending from claim 1 (claims 7, 9, 12 and 15).

In claim 1, step "b)" recites treating the TEDA solution with one or more suitable adsorbents. Though one of ordinary skill would undoubtedly understand what types of material are embraced by "adsorbent," the more narrow in scope "suitable adsorbent," is unclear. What types of adsorbent are excluded by the additional qualifier "suitable" are not known from a reading of claim 1 in light of the specification. Only two types of adsorbent are mentioned in the specification in the sentence bridging pages 8 and 9 – basic anion exchange resins and activated carbons. Whatever additional types of adsorbent applicants intend to be within the scope of claim 1 are unknown. Applicants have only taught basic anion exchangers and activated carbon in the specification, and

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only applicants are aware of what types of adsorbents are "suitable" for the process according to the invention disclosed.

Deletion of "suitable" from claim 1 will overcome this ground of rejection.

Claim 4 recites "the anion exchanger," referring to claim 1, while no anion exchanger is recited in claim 1. It has been assumed that claim 4 was intended to depend from claim 2. Additionally, claim 4 specifies that the anion exchanger has "functional groups." All anion exchangers have functional groups, and therefore the limitation in claim 4 fails to further limit the anion exchanger of claim 2. Even if "functional groups" in claim 4 were replaced with "anions," that claim would still fail to further limit claim 2, because all anion exchangers have anions as well as functional groups.

Claim 5 is indefinite because the "functional groups" recited in that claim are not functional groups, they are anions. Anions are bound to an anion exchanger, and although they are bound to that exchanger, the anions do not represent functional groups, because ionically bound species are not considered to be functional groups, only covalently bound moieties are. In an anion exchanger, it is the anions initially bound to the exchanger that are exchanged with anions from the solution passed through the anion exchanger.  $\text{OH}^-$ ,  $\text{Cl}^-$  and  $\text{SO}_4^{2-}$  are common anions found in anion exchange resins. Claim 5 has been examined on the merits as though "the functional groups" were "the anions."

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Claim 4 should be cancelled, and claim 5 amended to depend from claim 2 and be amended to specify "The process as claimed in claim 2, wherein the anion exchanger bears anions selected from the group consisting of  $\text{OH}^-$ ,  $\text{Cl}^-$  and  $\text{SO}_4^{2-}$ ."

Claim 6 depends from claim 1, and specifies that "the activated carbon" has a certain specific surface area. Claim 1 does not recite any activated carbon, so claim 6 lacks antecedent basis in the claim from which it depends.

Claim 7, similarly, lacks antecedent basis for the recitation of "the activated carbon."

Claims 6 and 7 have been examined on the merits as though they depended from claim 2.

Claim 8 refers to a strongly basic anion exchanger and an activated carbon, while depending from claim 1. Though not lacking antecedent basis *per se*, the terms "strongly basic anion exchanger" and "an activated carbon" in claim 8 are indefinite, because since the process is specified in open language, the purpose of the recited "strongly basic anion exchanger" and "an activated carbon" in claim 1 is not known. These elements of the process according to claim 8 could be employed anywhere in a process according to claim 1, which process may embrace non-recited process steps. So, it is not readily apparent that the "strongly basic anion exchanger" and "an activated carbon" recited in claim 8 are the adsorbents of step "b)" in claim 1.

Claim 8 has been examined on the merits as though it depended from claim 3.

Claim 10 specifies a series of polyhydric alcohols, or ethers of the polyhydric alcohols with a lower "monovalent" alcohol.

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All of the named alcohols in claim 10 lack antecedent basis in claim 1, from which claim 10 depends. Claim 10 specifies that the solvent employed in the process is a monohydric alcohol.

The exact meaning of the term "monovalent alcohol" in claims 10 and 11 is not understood. It has been assumed that by "monovalent," applicants intended "monohydric." "Monovalent" is a term which means "bonded at one atom," not necessarily the same thing as "monohydric," which is an alcohol having only one -OH group. "Monovalent" alcohols are not mentioned in the specification.

Claim 14 specifies that the adsorbent/adsorbents are "regenerated" after use. Definition "(1)" in Hawley's Condensed Chemical Dictionary, 13th ed., revised by Richard J. Lewis, Sr, Van Nostrand Reinhold, page 960, © 1997, of the word "regeneration" is "restoration of a material to its original condition after it has undergone chemical modification necessary for manufacturing purposes." The Hawley's definition states that the most common instance is that of cellulose for rayon production. Since the specification only teaches what process limitations are embraced by regeneration with respect to activated carbon and anion exchange material entails, the term "regeneration" is indefinite because for all of the undisclosed adsorbent materials (those adsorbents other than anion exchangers or activated carbon), one of ordinary skill would not understand what process manipulations are embraced by "regeneration," with respect to those undisclosed adsorbent materials.

It is suggested that claim 14 be amended so that it depends from claim 2, and the term "asorbent/adsorbents" be replaced with "basic anion exchangers and activated carbons."

***Examiner's Comments***

It has been assumed that these complicated and manifold deficiencies under 35 U.S.C. 112, second paragraph, which are set forth above, are the result of errors in the translation of the instant application from the German language.

Correction of the specification at least at page 4, lines 11 and 12, and page 8, lines 19 and 20, it appears, is required, in addition to correction of the claims.

The examiner urges applicants to carefully review the specification and correct where needed.

Somehow, the terms "polyhydric" and "monohydric" have been transposed in the claims and in the specification. The process has been searched bearing in mind the invention as shown in the examples of the instant specification, which demonstrate the use of a polyhydric alcohol as the TEDA quench medium.

***Information Disclosure Statement***

The Information Disclosure Statement filed by applicants 18 June 2004 has been considered, and the PTO-1449 form accompanying that Statement, initialed and signed to that effect, are enclosed herewith. The PTO-1449 form lists an incorrect application number for this application, and the examiner has corrected this. Also, the third and fifth U.S. patents cited on the first page of the PTO-1449 form appear to have been erroneously cited, as those patents are to electrical or mechanical inventions.

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***Allowable Subject Matter***

Claims 1-17 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The closest prior art is US 6,552,194 (Lang et al), which shares on common inventor with the instant application, and could qualify prior art under 35 U.S.C. 102(e), as it was filed in the United States before the German priority date claimed by applicants in the instant application.

Lange et al does not disclose a process according to the instant claims; the TEDA quench liquid is limited to pentane in the exemplified embodiments and although some polyhydric alcohols are suggested (col. 4, lines 55-60) as the TEDA quench liquid, a rejection under 35 U.S.C. 103 is prohibited under 35 U.S.C. 103(c), because the Lang et al patent is commonly owned with the instant application. The Lang et al patent also fails to teach anything about adsorbent materials.

***Conclusion***

Any inquiry concerning this communication should be directed to Zachary Tucker whose telephone number is (571) 272-0677. The examiner can normally be reached Tuesday-Thursday from 8:00am to 4:30pm or Monday from 6:00am to 1:30pm. If Attempts to reach the examiner are unsuccessful, contact the examiner's supervisor, James O. Wilson, at (571) 272-0661.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

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